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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/321,809	05/28/1999	RICHARD L. FRANK	1958.1022-000	7075

58403 7590 08/08/2006

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EXAMINER	
TANG, KENNETH	

ART UNIT	PAPER NUMBER
2195	

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/321,809	FRANK ET AL.	
	Examiner	Art Unit	
	Kenneth Tang	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,8,10,15,17,22,24 and 33-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3, 8, 10, 15, 17, 22, 24, and 33-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This final action is in response to the Amendment filed on 5/10/06. Applicant's arguments have been fully considered but are now moot in view of the new grounds of rejections.

2. Claims 1, 3, 8, 10, 15, 17, 22, 24, and 33-42 are considered for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 3, 8, 10, 15, 17, 33-34, 37-39, and 42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claims 1, 8 and 15, the newly added limitation, "hibernating the donor process in a sleep state while the allocated memory remains accessible to other processes" is not supported in the Specification on page 10, lines 20-26, like the Applicant states. It is neither found anywhere else in the Specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3, 8, 10, 15, 17, 22, 24, and 33-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner (US 5,940,868) in view of Reneris et al. (hereinafter Reneris) (US 5,931,903).

5. As to claim 1, Wagner teaches a method for allocating memory to a process on a computer (memory allocation method and apparatus) *(see Title)*, the method comprising:

creating a plurality of processes (creating a multiplicity of processes) *(col. 1, lines 59-65)*, each process being allocated a respective amount of memory, the processes including one consumer process (request to access resource) *(col. 3, lines 40-51 and col. 4, lines 1-7)* and a donor process (software routines) *(col. 1, lines 5-44, col. 3, lines 40-51 and col. 4, lines 1-7)*; and

pooling (aggregating) the allocated memory for the processes together for use by the consumer process *(col. 1, lines 59-67, claim 11)*.

6. It is noted that the broadest reasonable interpretation of a consumer process is merely a process that requests to access a resource. The broadest reasonable interpretation of a donor process is merely a process that includes one or more software routines. The Applicant's Specification does not contradict this.

7. Wagner fails to explicitly teach wherein the memory allocated to the donor process is accessible to other processes and hibernating the donor process in a sleep state while the allocated memory remains accessible to other processes. However, Reneris teaches transferring between processes through a device driver and having a hibernate working memory which serves

as allocated memory remaining accessible to other processes during hibernation *(col. 9, lines 15-58)*. The references are combinable because Reneris discloses that its hibernate/awaken function would be operable on any computer capable of running an operating system *(col. 2, lines 44-45)*. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the memory allocation system of Wagner to the memory allocation system of Reneris because it allows for efficient processing *(col. 2, lines 5-10 and 35-45, col. 9, lines 15-58)*.

8. As to claim 3, Wagner teaches wherein the number of donor processes determined from the amount of allocated memory requested by the consumer process, each donor process donating allocated memory to the consumer process *(col. 1, lines 5-44, col. 3, lines 40-51 and col. 4, lines 1-7)*.

9. As to claim 8, it is rejected for the same reasons as stated in the rejection of claim 1.

10. As to claim 10, it is rejected for the same reasons as stated in the rejection of claim 3.

11. As to claim 15, it is rejected for the same reasons as stated in the rejection of claim 1. In addition, it is inherent that the computer system has a central processing unit (CPU).

12. As to claim 17, it is rejected for the same reasons as stated in the rejection of claim 3.

13. As to claim 22, Wagner teaches an apparatus for allocating to a process in a computer (memory allocation method and apparatus) *(see Title)* comprising:

means for, creating a plurality of processes, each process being allocated an amount of memory, the processing including one consumer process (request to access resource) *(col. 3, lines 40-51 and col. 4, lines 1-7)* and donor process (software routines) *(col. 1, lines 5-44, col. 3, lines 40-51 and col. 4, lines 1-7)*; and

means for, pooling (aggregating) the memory of the processes together for use by consumer process *(col. 1, lines 59-67, claim 11)*.

the means for pooling memory further including means for donating memory, further comprising:

means for detecting a memory allocation by the donor process *(col. 1, lines 5-15)*;

means for transferring accessibility of the allocated memory to the consumer process *(with driver) (col. 1, lines 5-15, col. 5, lines 59-67, etc.)*;

14. It is noted that the broadest reasonable interpretation of a consumer process is merely a process that requests to access a resource. The broadest reasonable interpretation of a donor process is merely a process that includes one or more software routines. The Applicant's Specification does not contradict this.

15. Wagner teaches that a processor assembly 20 performs the means for above with memory for the processes to be allocated to *(col. 3, lines 40-52, etc.)*. Wagner is silent on deallocating the memory by sending a release request to the donor process. However, Reneris teaches allocating memory with a query based memory manager as well as removing the allocation *(deallocating) (col. 10, lines 10-17, etc.)*. It would have been obvious to one of ordinary skill in the art at the

time the invention was made to deallocate the memory allocation because it is no longer needed *(col. 10, lines 10-17, etc.)*.

16. As to claim 24, Wagner teaches wherein the number of donor processes is determined from the amount of allocated memory requested by the consumer process, each donor process donating allocated memory to the consumer process *(col. 1, lines 5-44, col. 3, lines 40-51 and col. 4, lines 1-7)*.

17. As to claims 33-35, Reneris teaches wherein the donor process transfers accessibilty of allocated memory to a driver *(col. 9, lines 59-67 through col. 10, lines 1-10, etc.)*.

18. As to claim 36, Wagner fails to explicitly teach wherein the donor process transfers accessibilty of allocated memory to a driver. However, Reneris teaches transferring between processes through a device driver and having a hibernate working memory which serves as allocated memory remaining accessible to other processes during hibernation *(col. 9, lines 15-58)*. The references are combinable because Reneris discloses that its hibernate/awaken function would be operable on any computer capable of running an operating system *(col. 2, lines 44-45)*. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the memory allocation system of Wagner to the memory allocation system of Reneris because it allows for efficient processing *(col. 2, lines 5-10 and 35-45, col. 9, lines 15-58)*.

19. As to claims 37-40, Wagner and Reneris is silent that the donor process sleeps after transferring ownership. However, it would be obvious to one of ordinary skill in the art for a process to sleep after it has transferred ownership and it is no longer needed because this would improve the efficiency of processing.

20. As to claim 41, Wagner teaches a method for allocating memory to a process on a computer, the method comprising:

creating a plurality of processes (creating a multiplicity of processes) *(col. 1, lines 59-65)*, each process being allocated an amount of memory, the processes including one consumer process (request to access resource) *(col. 3, lines 40-51 and col. 4, lines 1-7)* and a donor process (software routines) *(col. 1, lines 5-44, col. 3, lines 40-51 and col. 4, lines 1-7)* wherein memory allocated to the donor process is accessible to other processes; and

pooling memory (aggregating) of the processes together for use by the consumer process, the number of donor processes determined from the amount of allocated memory requested by the consumer process, each donor process donating allocated memory to the consumer process *(col. 1, lines 59-67, claim 11)*, donating memory further comprising:

detecting a memory allocation by the donor process *(col. 1, lines 5-15)*;

21. Wagner is silent on receiving a register command from a memory manager and transferring ownership of the allocated memory to the memory manager in response to the register command. However, Reneris teaches transferring between processes through a device driver and having a hibernate working memory which serves as allocated memory remaining accessible to other processes during hibernation *(col. 9, lines 15-58)*. Reneris also teaches a

query/request based memory manager that performs the allocations/deallocations *(col. 10, lines 10-17)*. The references are combinable because Reneris discloses that its hibernate/awaken function would be operable on any computer capable of running an operating system *(col. 2, lines 44-45)*. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the memory allocation system of Wagner to the memory allocation system of Reneris because it allows for efficient processing *(col. 2, lines 5-10 and 35-45, col. 9, lines 15-58)*.

22. As to claim 42, Wagner teaches wherein donating memory further comprises detecting a memory allocation by the donor process (col. 1, lines 5-15). Reneris teaches receiving a register command from a memory manager *(col. 10, lines 10-18)* and transferring ownership of the allocated memory to the memory manager in response to the register command, the donor process responsive to the memory manager for allocating and deallocating memory accessible to a consumer process *(col. 10, lines 10-18)*.

23. **Claims 1, 3, 8, 10, 15, 17, 22, 24, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner (US 5,940,868) in view of Allison et al. (hereinafter Allison) (US 6,430,665 B1).**

24. As to claim 1, Wagner teaches a method for allocating memory to a process on a computer (memory allocation method and apparatus) *(see Title)*, the method comprising:

creating a plurality of processes (creating a multiplicity of processes) *(col. 1, lines 59-65)*, each process being allocated a respective amount of memory, the processes including one consumer process (request to access resource) *(col. 3, lines 40-51 and col. 4, lines 1-7)* and a donor process (software routines) *(col. 1, lines 5-44, col. 3, lines 40-51 and col. 4, lines 1-7)*; and

pooling (aggregating) the allocated memory for the processes together for use by the consumer process *(col. 1, lines 59-67, claim 11)*.

25. It is noted that the broadest reasonable interpretation of a consumer process is merely a process that requests to access a resource. The broadest reasonable interpretation of a donor process is merely a process that includes one or more software routines. The Applicant's Specification does not contradict this.

26. Wagner fails to explicitly teach wherein the memory allocated to the donor process is accessible to other processes and hibernating the donor process in a sleep state while the allocated memory remains accessible to other processes. However, Allison teaches a system and method for allocating memory among processes in which during hibernation/sleep mode of a memory allocator process, access is allowed to previously allocated memory (see Fig. 4, items 410 and 470, etc.). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the memory allocation system of Wagner to the memory allocation system of Allison because this provides for efficient allocation of memory and without requiring a large amount of processing time *(col. 2, lines 33-36)*.

27. As to claim 3, Wagner teaches wherein the number of donor processes determined from the amount of allocated memory requested by the consumer process, each donor process

donating allocated memory to the consumer process *(col. 1, lines 5-44, col. 3, lines 40-51 and col. 4, lines 1-7)*.

28. As to claim 8, it is rejected for the same reasons as stated in the rejection of claim 1.

29. As to claim 10, it is rejected for the same reasons as stated in the rejection of claim 3.

30. As to claim 15, it is rejected for the same reasons as stated in the rejection of claim 1. In addition, it is inherent that the computer system has a central processing unit (CPU).

31. As to claim 17, it is rejected for the same reasons as stated in the rejection of claim 3.

32. As to claim 22, Wagner teaches an apparatus for allocating to a process in a computer (memory allocation method and apparatus) *(see Title)* comprising:

means for, creating a plurality of processes, each process being allocated an amount of memory, the processing including one consumer process (request to access resource) *(col. 3, lines 40-51 and col. 4, lines 1-7)* and donor process (software routines) *(col. 1, lines 5-44, col. 3, lines 40-51 and col. 4, lines 1-7)*; and

means for, pooling (aggregating) the memory of the processes together for use by consumer process *(col. 1, lines 59-67, claim 11)*.

the means for pooling memory further including means for donating memory, further comprising:

means for detecting a memory allocation by the donor process *(col. 1, lines 5-15)*;

means for transferring accessibility of the allocated memory to the consumer process *(with driver) (col. 1, lines 5-15, col. 5, lines 59-67, etc.)*;

33. It is noted that the broadest reasonable interpretation of a consumer process is merely a process that requests to access a resource. The broadest reasonable interpretation of a donor process is merely a process that includes one or more software routines. The Applicant's Specification does not contradict this.

34. Wagner teaches that a processor assembly 20 performs the means for above with memory for the processes to be allocated to *(col. 3, lines 40-52, etc.)*. Wagner is silent on deallocating the memory by sending a release request to the donor process. However, Allison teaches a system and method for allocating memory among processes in which during hibernation/sleep mode of a memory allocator process, access is allowed to previously allocated memory (see Fig. 4, items 410 and 470, etc.) as well as a deallocating memory to free up memory *(col. 4, lines 31-33, etc.)*. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the memory allocation system of Wagner to the memory allocation system of Allison because this provides for efficient use of memory and without requiring a large amount of processing time *(col. 2, lines 33-36)*.

35. As to claim 24, Wagner teaches wherein the number of donor processes is determined from the amount of allocated memory requested by the consumer process, each donor process donating allocated memory to the consumer process *(col. 1, lines 5-44, col. 3, lines 40-51 and col. 4, lines 1-7)*.

36. As to claim 41, Wagner teaches a method for allocating memory to a process on a computer, the method comprising:

creating a plurality of processes (creating a multiplicity of processes) *(col. 1, lines 59-65)*, each process being allocated an amount of memory, the processes including one consumer process (request to access resource) *(col. 3, lines 40-51 and col. 4, lines 1-7)* and a donor process (software routines) *(col. 1, lines 5-44, col. 3, lines 40-51 and col. 4, lines 1-7)* wherein memory allocated to the donor process is accessible to other processes; and

pooling memory (aggregating) of the processes together for use by the consumer process, the number of donor processes determined from the amount of allocated memory requested by the consumer process, each donor process donating allocated memory to the consumer process *(col. 1, lines 59-67, claim 11)*, donating memory further comprising:

detecting a memory allocation by the donor process *(col. 1, lines 5-15)*;

37. Wagner is silent on receiving a register command from a memory manager and transferring ownership of the allocated memory to the memory manager in response to the register command. However, Allison teaches transferring ownership of the allocated memory to the memory allocator (memory manager) based on instructions *(col. 3, lines 19-47)*. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the memory allocation system of Wagner to the memory allocation system of Allison because this provides for efficient allocation of memory and without requiring a large amount of processing time *(col. 2, lines 33-36)*.

38. Claims 33-40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner (US 5,940,868) in view of Allison et al. (hereinafter Allison) (US 6,430,665 B1), and further in view of Reneris et al. (hereinafter Reneris) (US 5,931,903).

39. As to claims 33-36, Wagner and Allison are silent wherein the donor process transfers accessibilty of allocated memory to a driver. However, Reneris teaches transferring between processes through a device driver and having a hibernate working memory which serves as allocated memory remaining accessible to other processes during hibernation *(col. 9, lines 15-58)*. The references are combinable because Reneris discloses that its hibernate/awaken function would be operable on any computer capable of running an operating system *(col. 2, lines 44-45)*. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the memory allocation system of Wagner to the memory allocation system of Reneris because it allows for efficient processing *(col. 2, lines 5-10 and 35-45, col. 9, lines 15-58)*.

40. As to claims 37-40, the references are silent that the donor process sleeps after transferring ownership. However, it would be obvious to one of ordinary skill in the art for a process to sleep after it has transferred ownership and it is no longer needed because this would improve the efficiency of processing.

41. As to claim 42, Wagner teaches wherein donating memory further comprises detecting a memory allocation by the donor process (col. 1, lines 5-15). Reneris teaches receiving a register command from a memory manager *(col. 10, lines 10-18)* and transferring ownership of the allocated memory to the memory manager in response to the register command, the donor process responsive to the memory manager for allocating and deallocating memory accessible to a consumer process *(col. 10, lines 10-18)*.

Response to Arguments

42. Applicant's arguments regarding prior art have been fully considered but are now moot in view of the new grounds of rejections.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kt
8/2/06

LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER